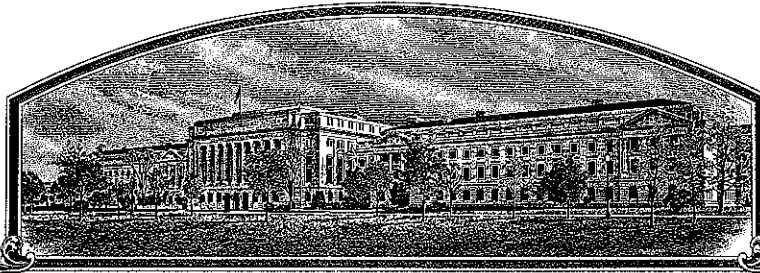


No.

200500168



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

D&H Technology Holding Company, LLC

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSE, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSE, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

COTTON

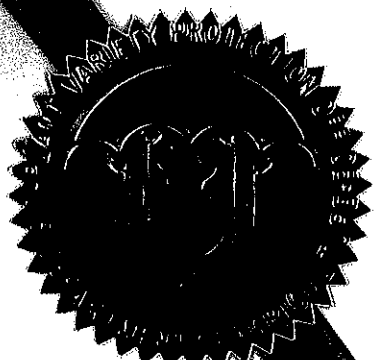
'DP 454 BG/RR'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this fourteenth day of February, in the year two thousand and six.

Attest:

Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Secretary of Agriculture



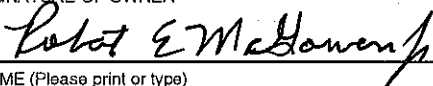
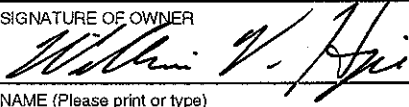
U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY DIVISION - PLANT VARIETY PROTECTION OFFICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions and information collection burden statement on reverse)

The following statements are made in accordance with the Privacy Act of 1974 (5U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF OWNER D&PL Technology Holding Company, LLC.		2. TEMPORARY DESIGNATION OR EXPERIMENTAL NAME 03W201BR		3. VARIETY NAME DP 454 BG/RR	
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code, and Country) PO Box 157 100 Main Street Scott, Mississippi 38772 USA		5. TELEPHONE (include area code) (662) 742-4141		PVPO NUMBER 200500168	
		6. FAX (include area code) (662) 742-3182		FILING DATE MARCH 1, 2005	
7. IF THE OWNER IS NOT A "PERSON" GIVE FORM OF ORGANIZATION (corporation, partnership, association, etc.) Corporation		8. IF INCORPORATED, GIVE STATE OF INCORPORATION Delaware		9. DATE OF INCORPORATION February 29, 1996	
10. NAME AND ADDRESS OF OWNER REPRESENTATIVE(S) TO SERVE IN THIS APPLICATION. (First person listed will receive all papers) Delta and Pine Land Company Kelly Casavechia P.O. Box 157 Scott, MS 38772				FILING AND EXAMINATION FEE: \$ 3,652.00 DATE 3/1/05 CERTIFICATION FEE: \$ 768.00 DATE 1/9/06	
11. TELEPHONE (include area code) (662) 742-4141		12. FAX (include area code) (662) 742-3182		13. E-MAIL kelly.h.casavechia@deltaandpine.com	
				14. CROP KIND (Common Name) Cotton	
15. GENUS AND SPECIES NAME OF CROP Gossypium hirsutum		16. FAMILY NAME (Botanical) Malvaceae		17. IS THE VARIETY A FIRST GENERATION HYBRID? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
18. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow instructions on reverse). a. <input checked="" type="checkbox"/> Exhibit A. Origin and Breeding History of the Variety b. <input checked="" type="checkbox"/> Exhibit B. Statement of Distinctness c. <input checked="" type="checkbox"/> Exhibit C. Objective Description of the Variety d. <input checked="" type="checkbox"/> Exhibit D. Additional Description of the Variety (Optional) e. <input checked="" type="checkbox"/> Exhibit E. Statement of the Basis of the Owner's Ownership f. <input checked="" type="checkbox"/> Voucher Sample (2,500 viable untreated seeds or, for tuber propagated varieties, verification that tissue culture will be deposited and maintained in an approved public repository) g. <input checked="" type="checkbox"/> Filing and Examination Fee (\$2,450), made payable to "Treasurer of the United States" (Mail to the Plant Variety Protection Office)			19. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE SOLD AS A CLASS OF CERTIFIED SEED? (See Section 83(a) of the Plant Variety Protection Act) <input type="checkbox"/> YES (If "yes", answer items 20 and 21 below) <input checked="" type="checkbox"/> NO (If "no", go to item 22)		
			20. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? <input type="checkbox"/> YES <input type="checkbox"/> NO		
			21. IF "YES" TO ITEM 20, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED? <input type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input type="checkbox"/> CERTIFIED		
22. HAS THE VARIETY (INCLUDING ANY HARVESTED MATERIAL) OR A HYBRID PRODUCE FROM THIS VARIETY BEEN SOLD, DISPOSED OF, TRANSFERRED, OR USED IN THE U.S. OTHER COUNTRIES? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO IF YES, YOU MUST PROVIDE THE DATE OF FIRST SALE, DISPOSITION, TRANSFER, OR USE FOR EACH COUNTRY AND THE CIRCUMSTANCES. (Please use space indicated on reverse.)			23. IS THE VARIETY OR ANY COMPONENT OF THE VARIETY PROTECTED BY INTELLECTUAL PROPERTY RIGHT (PLANT BREEDER'S RIGHT OR PATENT)? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO IF YES, GIVE COUNTRY, DATE OF FILING OR ISSUANCE AND ASSIGNEE REFERENCE NUMBER. (Please use space indicated on reverse.)		
24. The owners declare that a viable sample of basic seed of the variety will be furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate. The undersigned owner(s) is(are) the owner of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 42, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act. Owner(s) is(are) informed that false representation herein can jeopardize protection and result in penalties.					
SIGNATURE OF OWNER 			SIGNATURE OF OWNER 		
NAME (Please print or type) Robert McGowen			NAME (Please print or type) William V. Hugie		
CAPACITY OR TITLE Cotton Breeder		DATE		CAPACITY OR TITLE Vice President/Director of Research	
				DATE 02/25/2005	

Instructions

GENERAL: To be effectively filed with the Plant Variety Protection Office (PVPO), ALL of the following items must be received in the PVPO: (1) Completed application form signed by the owner; (2) completed exhibits A, B, C, E; (3) for a seed reproduced variety at least 2,500 viable untreated seeds, for a hybrid variety at least 2,500 untreated seeds of each line necessary to reproduce the variety, or for tuber reproduced varieties verification that a viable (*in the sense that it will reproduce an entire plant*) tissue culture will be deposited and maintained in an approved public repository; (4) check drawn on a U.S. bank for \$2,705 (\$320 filing fee and \$2,385 examination fee), payable to "Treasurer of the United States" (*See Section 97.6 of the Regulations and Rules of Practice*). Partial applications will be held in the PVPO for not more than 90 days, then returned to the applicant as unfilled. Mail application and other requirements to Plant Variety Protection Office, AMS, USDA, Room 500, NAL Building, 10301 Baltimore Avenue, Beltsville, MD 20705-2351. Retain one copy for your files. All items on the face of the application are self explanatory unless noted below. Corrections on the application form and exhibits must be initialed and dated. DO NOT use masking materials to make corrections. If a certificate is allowed, you will be requested to send a check payable to "Treasurer of the United States" in the amount of \$320 for issuance of the certificate. Certificates will be issued to owner, not licensee or agent.

Plant Variety Protection Office

Telephone: (301) 504-5518

FAX: (301) 504-5291

Homepage: <http://www.ams.usda.gov/science/pvpo/pvp.htm>

200500168

ITEM

- 18a. Give: (1) the genealogy, including public and commercial varieites, lines, or clones used, and the breeding method
(2) the details of subsequent stages of selection and multiplication;
(3) evidence of uniformity and stability; and
(4) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified
- 18b. Give a summary of the variety's distinctness. Clearly state how this application variety may be distinguished from all other varieties in the same crop. If the new variety is most similar to one variety or a group of related varieties:
- (1) Identify these varieties and state all differences objectively;
(2) attach statistical data for characters expressed numerically and demonstrate that these are clear differences; and
(3) submit, if helpful, seed and plant specimens or photographs (prints) of seed and plant comparisons which clearly indicate distinctness.
- 18c. Exhibit C forms are available from the PVPO Office for most crops; specify crop kind. Fill in Exhibit C (Objective Description of Variety) form as completely as possible to describe your variety.
- 18d. Optional additional characteristics and/or photographs. Describe any additional characteristics that cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the characteristics that are difficult to describe, such as plant habit, plant color, disease resistance, etc.
- 18e. Section 52(5) of the Act requires applicants to furnish a statement of the basis of the applicant's ownership. An Exhibit E form is available from the PVPO.
19. If "Yes" is specified (*seed of this variety be sold by variety name only, as a class of certified seed*), the applicant MAY NOT reverse this affirmative decision after the variety has been sold and so labeled, the decision published, or the certificate issued. However, if "No" has been specified, the applicant may change the choice. (*See Regulations and Rules of Practice, Section 97.103*).
22. See Sections 41, 42, and 43 of the Act and Section 97.5 of the regulations for eligibility requirements.
23. See Section 55 of the Act for instructions on claiming the benefit of an earlier filing date.

21. CONTINUED FROM FRONT (Please provide a statement as to the limitation and sequence of generations that may be certified.)

22. CONTINUED FROM FRONT (Please provide the date of first sale, disposition, transfer, or use for each country and the circumstances, if the variety (including any harvested material) or a hybrid produced from this variety has been sold, disposed of, transferred, or used in the U.S. or other countries.)

23. CONTINUED FROM FRONT (Please give the country, date of filing or issuance, and assigned reference number, if the variety or any component of the variety is protected by intellectual property right (Plant Breeder's Right or Patent).)

Bollgard® with Roundup Ready® cotton

THESE SEEDS ARE COVERED UNDER U. S. PATENTS 5,633,435; 5,500,365; 5,424,200; 5,359,142; 5,352,605; 5,530,196; 5,322,938; 5,196,525; 5,188,642; 5,164,316; 4,940,835; 5,717,084; 5,728,925; and 5,804,425.

NOTES: It is the responsibility of the applicant/owner to keep the PVPO informed of any changes of address or change of ownership or assignment or owner's representative during the life of the application/certificate. There is no charge for filing a change of address. The fee for filing a change of ownership or assignment or any modification of owner's name is specified in Section 97.175 of the regulations. (*See Section 101 of the Act, and Sections 97.130, 97.131, 97.175(h) of the Regulations and Rules of Practice.*)

To avoid conflict with other variety names in use, the applicant must check the appropriate recognized authority. For example, for agricultural and vegetable crops, contact: Seed Branch, AMS, USDA, Room 213, Building 306, Beltsville Agricultural Research Center-East, Beltsville, MD 20705.
Telephone: (301) 504-8089. <http://www.ams.usda.gov/lsg/seed/lsg-sd.htm>

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this collection of information is (0591-0055). The time required to complete this information collection is estimated to average 1.4 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

The U. S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, sex, religion, age, disability, political beliefs, sexual orientation, or marital or family status. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington, DC 20250-9410 or call (202) 720-5984 (voice and TDD). USDA is an equal opportunity provider and employer.

S&T -470 (04-01) designed by the Plant Variety Protection Office with WordPerfect 6.0a. Replaces STD-470 (02-89) which is obsolete.

EXHIBIT A**DELTA AND PINE LAND COMPANY'S APPLICATION FOR DP 454 BG/RR****ORIGIN AND BREEDING HISTORY**

DP 454 BG/RR (03W201BR) was developed by the backcross breeding method. The donor parent DP 50 BGRR, whose donor parents, in turn, was a plant of the cotton variety COKER 312 LINE 1445 and a line with insertion 531 of construct PV-GHBK06 containing a *Bacillus thuringiensis* var. *kurstaki* pesticide protein developed by the Monsanto Company. LINE 1445 was developed by the MONSANTO COMPANY using Recombinant DNA techniques to introduce a resistant version of the gene EPSPS which encodes the enzyme: 5-enolpyruvylshikimate-3-phosphate synthase (EPSPS). This modified EPSPS was originally isolated from the common soil borne microorganism *Agrobacterium sp.* strain CP4 and confers to LINE 1445 resistance or tolerance to the herbicide glyphosate [formulation of glyphosate, N (phosphonomethyl) glycine] commercialized under the trade name ROUNDUP.

The F₁, BC₁, BC₂, and BC₃ crosses were made in Delta and Pine Land Company's greenhouse in Scott, MS. BC₃F₁ plants were grown and selfed in the greenhouses located at Scott, MS. BC₃F₂ plants were grown and selfed in the field near Puntarenas, Costa Rica in 2000.

BC₃F₃ progeny rows were grown at Scott, MS in the summer of 2001. Progeny rows were tested for trueness to type of the recurrent parent 00S04. Those true to type and also containing the "Roundup Ready Gene" in a homozygous form and tested positive for the presence of the "BollGard Gene" were selected for increase. The line 03W201BR was first increased in Scott, MS in 2002. The line 03W201BR was sent to winter nursery in Costa Rica for increase during the 2003-04 season.

03W201BR was evaluated across the cotton belt in replicated research plots in 2002, 2003, and 2004. Separate isolated increases of 03W201BR were grown in 2002, 2003, and 2004. In 2005, 03W201BR was given the commercial name of DP 454 BG/RR.

STATEMENT OF UNIFORMITY AND STABILITY

DP 454 BG/RR has been observed every generation since 2002 and has shown to be uniform and stable. Less than 2% of the plants do not contain the gene insertion 1445 which imparts resistance to the herbicide Roundup and the gene insertion 531 which imparts resistance to Lepidopteran insects.

EXHIBIT B

DELTA AND PINE LAND COMPANY'S
PVP APPLICATION FOR:

DP 454 BG/RR

NOVELTY STATEMENT

DP 454 BG/RR is most similar to DP 444 BG/RR. DP 454 BG/RR plants carry the gene insertion 1445 of a construct developed by the MOSANTO COMPANY, which causes these plants to be tolerant to the herbicide ROUNDUP (glyphosate) and the gene of Insertion 531 of construct PV-GHBK04 containing a *Bacillus thuringiensis* var. *kurstaki* pesticide protein imparting resistance to Lepidopteran insects. DP 444 BG/RR, the comparison variety in this application, also contains the gene insertions of 1445 and 531 as described above. Significant differences in fiber properties have been observed in these varieties. DP 454 BG/RR has a 1.32 % higher lint turnout, 0.019 inch shorter fiber length, and 0.41% lower uniformity than DP 444 BG/RR.

Coker 312 Line 531 has the following transgenic insertion.

Phenotype: Lepidopteran insect resistance
constructs: PV-GHBK04
genotype:

- promoter: CMoV – A 0.6 Kb 35S promoter region of cauliflower mosaic virus.
- gene: *cryIA* © - FL *B.t.k.* – a 3.6 Kb gene encoding the full length *Bacillus thuringiensis* insect control protein.
- 3' non-translated region: E9 3' – the 0.7 Kb 3' non-translated region of the pea *rbcS*-E9 gene *Agrobacterium tumefaciens* T-DNA.

Selectable marker:

- promoter 35S – A 0.35 Kb 35S promoter region of cauliflower mosaic virus.
- gene: NPT II – the 0.83 Kb neomycin phosphotransferase type II gene that confers kanamycin resistance.
- 3' non-translated region: NOS 3' – from the nopaline synthase gene of *Agrobacterium tumefaciens* T-DNA.

LINE 1445 was developed by the MONSANTO COMPANY using Recombinant DNA techniques to introduce a resistant version of the gene EPSPS which encodes the enzyme: 5-enoipyruvylshikimate-3 phosphate synthase (EPSPS). This modified EPSPS was originally isolated from the common soil borne microorganism *Agrobacterium sp.* Strain CP4 and confers to LINE 1445 resistance or tolerance to the herbicide glyphosate {formulation of glyphosate, N (phosphonomethyl) glycine} commercialized under the trade name ROUNDUP.

EXHIBIT B

D&PL TECHNOLOGY HOLDING COMPANY, LLC.

Application for:
DP 454 BG/RR

Table 1. Head to head comparisons of DP 454 BG/RR with DP 444 BG/RR

					Lint Turnout		Micronaire		Length		Uniformity Ratio		Strength		Elongation	
YEAR	REG-ION	EXPT	COUNTY	STATE	DP 454 BG/RR	DP 444 BG/RR	DP 454 BG/RR	DP 444 BG/RR	DP 454 BG/RR	DP 444 BG/RR	DP 454 BG/RR	DP 444 BG/RR	DP 454 BG/RR	DP 444 BG/RR	DP 454 BG/RR	DP 444 BG/RR
2002	NODE	21SM0323	WASHINGTON	MS	43.2	41.5	4.8	4.1	1.14	1.16	83.9	88.5	32.9	31.4	11.2	12.0
2003	AZ	33CO0712	PINAL	AZ	43.1	39.2	4.9	4.7	1.09	1.15	84.4	84.9	30.5	29.9	11.6	12.7
2003	TXHP	33HC0647	HALE	TX	43.2	40.7	3.8	3.6	1.11	1.19	83.0	84.0	28.8	30.3	9.2	9.5
2003	NOSE	33HV0114	DARLINGTON	SC	41.5	41.2	3.8	4.0	1.16	1.16	84.4	84.0	31.0	32.2	13.5	13.0
2003	AZ	33MA0717	PINAL	AZ	40.1	37.4	4.3	4.5	1.13	1.17	84.2	85.3	31.2	29.2	11.0	11.8
2003	NODE	33MN0312	MISSISSIPPI	AR	45.3	39.7	4.5	4.0	1.13	1.16	85.5	84.6	32.1	33.0	12.8	11.7
2003	SODE	33PB0425	SHARKEY	MS	45.2	40.5	4.0	3.9	1.13	1.14	84.0	84.0	31.2	31.6	11.6	13.2
2003	SODE	33PU0426	SHARKEY	MS	43.8	39.7	4.2	3.6	1.12	1.15	83.0	84.0	32.7	34.3	11.5	12.2
2003	NODE	33SM0311	BOLIVAR	MS	44.5	41.5	4.1	3.8	1.14	1.17	84.8	83.9	30.8	32.6	11.4	12.5
2003	SOSE	33TF0216	TIFT	GA	43.0	42.1	3.9	3.4	1.14	1.12	84.0	82.9	31.7	29.9	12.6	13.0
2003	SOSE	33WC0221	ATKINSON	GA	43.0	40.8	3.7	3.6	1.12	1.13	83.6	84.0	28.6	28.7	12.9	12.2
2004	NODE	42CY0318	LONOKE	AR	44.0	43.1										
2004	TXRP	42MU0546	KNOX	TX	42.6	40.1										
2004	NODE	42WV0317	WASHINGTON	MS	45.6	44.2										
2004	AZ	44CG0724	PINAL	AZ	44.7	42.7	4.6	4.8	1.06	1.12	83.3	83.6	28.4	30.0	12.4	12.4
2004	AZ	44CO0719	PINAL	AZ	44.8	41.7	4.8	4.7	1.08	1.14	83.0	83.6	28.0	32.1	12.9	12.5
2004	NODE	44CY0306	LONOKE	AR	41.3	42.7	4.4	4.1	1.15	1.14	84.5	84.7	32.7	32.2	14.0	13.5
2004	NOSE	44GB0107	WAYNE	NC	41.1	40.1	3.7	3.8	1.19	1.18	83.0	84.2	31.6	32.1	12.6	12.9
2004	NOSE	44HV0105	DARLINGTON	SC	39.2	40.3	3.2	3.8	1.16	1.17	83.7	84.2	29.7	30.4	14.4	14.1
2004	TXRP	44MU0539	KNOX	TX	42.4	40.2	4.1	4.2	1.14	1.17	83.5	83.3	30.0	29.7	11.6	12.3
2004	SODE	44PB0413	SHARKEY	MS	42.0	41.2	4.1	4.1	1.17	1.16	84.0	84.0	32.9	31.9	12.9	12.7
2004	SODE	44PU0414	SHARKEY	MS	43.0	41.4	4.0	3.9	1.11	1.13	81.0	82.0	33.7	33.5	11.8	11.6
2004	NOSE	44RM0108	HALIFAX	NC	43.3	44.2	4.1	4.2	1.11	1.13	82.7	82.7	29.4	29.8	12.9	12.2
2004	TXRP	44SA0540	TOM GREEN	TX	43.7	40.8										
2004	NOSE	44SC0106	SAMPSON	NC	42.8	39.6	3.7	3.8	1.11	1.11	84.1	83.2	30.6	29.8	14.0	13.6
2004	NODE	44SK0308	SCOTT	MO	43.0	41.8	3.6	4.2	1.09	1.10	82.1	82.2	31.2	32.2	12.3	12.9
2004	NODE	44SM0305	BOLIVAR	MS	40.7	40.3	4.4	3.8	1.14	1.16	85.7	85.1	35.6	34.3	12.8	13.1
2004	SOSE	44WC0205	ATKINSON	GA	43.7	41.7	3.4	3.4	1.16	1.16	83.5	84.2	29.9	31.2	13.2	14.1
2004	SOSE	44WU0206	ATKINSON	GA	43.6	41.7	3.3	3.4	1.11	1.12	83.1	83.0	33.9	33.7	11.0	12.0
2004	AZ	44YU0709	YUMA	AZ	44.3	43.8	4.3	4.6	1.09	1.12	82.2	84.6	26.1	27.7	13.2	14.3
2004	NODE	E1CPE11V01	TUNICA	MS	38.1	39.3	4.1	3.9	1.18	1.17	83.0	83.0	33.3	34.2		
2004	NODE	E1CPE11V02	DYER	TN	36.6	36.7	3.7	3.8	1.09	1.11	82.8	83.5	30.3	30.2		
2004	SODE	E2CPL11V02	SHARKEY	MS	35.0	36.3	3.6	3.8	1.11	1.14	83.6	84.7	29.0	29.7		
2004	SOSE	E3CPE11V01	LIMESTONE	AL	37.1	38.4	3.5	3.6	1.18	1.16	83.0	83.0	31.9	31.2		
2004	SOSE	E5CPL11R02	TIFT	GA	39.6	37.9	3.8	3.5	1.15	1.14	84.6	85.1	32.8	31.9		
2004	NOSE	E6CPL11V01	DARLINGTON	SC	40.4	38.1	4.3	4.4	1.15	1.14	83.6	84.1	30.8	30.0		
2004	SOSE	E6CPL11V02	ATKINSON	GA	37.8	37.8	3.9	4.1	1.14	1.18	82.9	83.0	31.2	32.2		
2004	NOSE	E7CPE11R24	DINWIDDIE	VA	38.1	39.4	4.2	4.4	1.10	1.16	82.0	82.0	31.3	30.1		
2004	TXHP	H1CLE102	LUBBOCK	TX	29.8	28.2	3.5	3.6	1.13	1.14	82.7	83.5	29.6	28.6		
2004	SOTX	H4CPE101	SAN PATRICIO	TX	36.6	36.3	4.6	4.7	1.02	1.05	80.0	81.0	29.1	29.0		
2004	CA	W1CPE101	FRESNO	CA	39.8	40.4										
2004	NODE	W2CPE11M13	PEMISCOTT	MO	31.0	32.3	3.5	3.3	1.12	1.14	82.8	82.6	31.0	31.2		
2004	NODE	W2CPE11M14	MISSISSIPPI	AR	39.9	37.1	3.6	3.8	1.15	1.18	82.0	83.0	31.1	31.3		
2004	SOTX	W3CPE101	BRAZOS	TX	29.5	30.1	3.2	3.1	1.08	1.08	81.0	81.0	30.0	30.3		
2004	SOTX	W4CPE102	BRAZOS	TX	35.0	33.9	3.7	3.8	1.10	1.11	82.0	82.0	30.2	29.8		
2004	SOTX	W4CPE103	NUECES	TX	36.2	33.4	4.0	3.8	1.09	1.11	81.0	82.0	28.5	29.0		
Average					40.70	39.38	3.97	3.94	1.123	1.142	83.20	83.61	30.86	31.03	12.4	12.6
No. Comparisons					46		41		41		41		41		26	
Difference					1.32		0.03		-0.019		-0.41		-0.17		-0.26	
F ratio - Analysis of Variance					26.310		0.462		24.502		7.562		0.884		3.422	
Probability of difference - F test					<0.0001		0.4970		<0.0001		0.0088		0.3527		0.0749	

Values in red are derived from the Analysis of Variance routine in the EXCEL - ANALYSIS TOOL PAK add-in

Public reporting burden for this collection of information is estimated to average 30 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Agriculture, Clearance Officer, OIRM, AG Box 7630, Jamie L. Whitten Building, Washington, D.C. 20250. When replying, refer to OMB No. 0581-0055 and form number in your letter. Under the PRA of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

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**U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY
PLANT VARIETY PROTECTION OFFICE
BELTSVILLE, MD 20705**

**EXHIBIT C
(COTTON)**

**OBJECTIVE DESCRIPTION OF VARIETY
COTTON (*Gossypium* spp.)**

NAME OF APPLICANT(S)	TEMPORARY DESIGNATION	VARIETY NAME
D&PL TECHNOLOGY HOLDING COMPANY, LLC.	03W201BR	DP 454 BG/RR
ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code)		FOR OFFICIAL USE ONLY
P.O. Box 157 100 N. Main Street Scott, Mississippi 38772		PVPO NUMBER
		200500168

Place the appropriate data that describes the varietal characteristic of this variety in the space provided. Characteristics described, including numerical measurements, should represent those that are typical for the variety. Royal Horticultural Society or any recognized color fan may be used to determine plant colors. Characters marked with an asterisk * indicate necessary characters to be measured.

SPECIFIC VARIETIES USED FOR COMPARISON AS CHECK VARIETIES IN THIS APPLICATION: Use standard regional check varieties which are adapted to your area. One of the comparison varieties must be the most similar variety used in Exhibit B.

Variety 1. DP 444 BG/RR Variety 2. _____ Variety 3. _____

***1. SPECIES:**

X *G. hirsutum* L. *G. barbadense* L.

***2. AREA(S) OF ADAPTATION: (A = Adapted, NA = Not Adapted, NT = Not Tested)**

<u> </u> A <u> </u> Eastern	<u> </u> A <u> </u> Delta	<u> </u> A <u> </u> Central	<u> </u> NT <u> </u> Blacklands
<u> </u> NA <u> </u> Plains	<u> </u> A <u> </u> Western	<u> </u> A <u> </u> Arizona	<u> </u> NT <u> </u> San Joaquin
<u> </u> Other (Specify): _____			

3. GENERAL: Characteristics which are known to be variable but are still useful for a meaningful description of the variety.

	Application Variety	Comparison Variety 1	Comparison Variety 2	Comparison Variety 3
Plant Habit:				
Spreading, Intermediate, Compact	<u> </u> Intermediate <u> </u>	<u> </u> Compact <u> </u>	_____	_____
Foliage:				
Sparse, Intermediate, Dense	<u> </u> Sparse <u> </u>	<u> </u> Sparse <u> </u>	_____	_____
Stem Lodging:				
Lodging, Intermediate, Erect	<u> </u> Intermediate <u> </u>	<u> </u> Intermediate <u> </u>	_____	_____
Fruiting Branch:				
Clustered, Short, Normal	<u> </u> Short <u> </u>	<u> </u> Short <u> </u>	_____	_____

3. GENERAL: (continued)

Growth:

Determinate, Intermediate,
Indeterminate

_ Intermediate _

_ Intermediate _

Leaf Color:

Greenish yellow, Light green,
Medium green, Dark green

_ Light green _

_ Light green _

Boll Shape: Length less than width,
Length equal to width,
Length more than width

Length more than width

Length more than width

Boll Breadth: Broadest at base,
Broadest at middle

_ Broadest at base _

_ Broadest at base _

*4. MATURITY: (50 % Open bolls; Preferred method; Describe method if different method was used.)

Date of 50 % open bolls

_ September 26 _

_ September 16 _

5. PLANT:

Cm to 1st Fruiting Branch:
(from cotyledonary node)

No. of Nodes to 1st Fruiting Branch:
(excluding cotyledonary node)

4.4

4.3

Mature Plant Height cm:

(from cotyledonary node to terminal)

115

110

*6. LEAF: Upper most, fully expanded leaf.

Type: Normal, Sub Okra,
Okra, Super Okra

_ Normal _

_ Normal _

Pubescence: Absent, Sparse,
Medium, Dense **OR** Trichomes/cm²
(Bottom surface excluding veins)

_ Medium _

_ Medium _

Nectaries: Present or Absent

_ Present _

_ Present _

*7. STEM PUBESCENCE:

Glabrous, Intermediate, Hairy

_ Intermediate _

_ Intermediate _

*8. GLANDS: (Gossypol) Absent, Sparse, Normal, More Than Normal

Leaf:

_ Normal _

_ Normal _

Stem:

_ Normal _

_ Normal _

Calyx Lobe: (normal is absent)

_ Normal _

_ Normal _

*9. FLOWER:

Petals: Cream, Yellow

_ Cream _

_ Cream _

Pollen: Cream, Yellow

_ Cream _

_ Cream _

Petal Spot: Present, Absent

_ Absent _

_ Absent _

*10. SEED:

200500168

Seed Index:

(g/100 seed, fuzzy basis)

10.7

10.6

Lint Index:

(g lint/100 seeds)

4.47

4.36

*11. BOLL:

Lint Percent:

 X Picked

 Pulled

40.7

39.39

OR

Gin Turnout:

 Picked

 Stripped

Number of Seeds per Boll

31.1

33.4

Grams Seed Cotton per Boll

4.41

4.5

Number of Locules per Boll

4-5

4-5

Boll Type:

(Stormproof, Storm Resistant, Open)

 Open

 Open

12. FIBER PROPERTIES:

Specify Method (HVI or other): HVI

* Length: (inches, 2.5% SL)

1.123

1.142

* Uniformity: (%)

83.20

83.61

* Strength, TI (g/tex)

30.86

31.03

* Elongation, EI (%)

12.40

12.60

* Micronaire:

3.97

3.94

Fineness (Source)

Yarn Tenacity: (cN/tex, 27 tex)

Yarn Strength: (lbs. 22's)

13. DISEASES: (NT = Not Tested, S = Susceptible, MS = Moderately Susceptible, MR = Moderately Resistant, R = Resistant)

 NT *Alternaria macrospora*

 NT Fusarium Wilt

 NT Anthracnose

 NT Phymatotrichum Root Rot

 NT Ascochyta Blight

 NT *Pythium* (specify species)

 NT Bacterial Blight (Race 1)

 NT *Rhizoctonia solani*

 NT Bacterial Blight (Race 2)

 NT Southwestern Cotton Rust

 Bacterial Blight (Race)

 NT *Thielaviopsis basicola*

13. DISEASES : (continued)

NT Diplodia Boll RotNT Verticillium WiltOther (specify) _____

14. NEMATODES, INSECTS AND PESTS: (NT = Not Tested, S = Susceptible, MS = Moderately Susceptible, MR = Moderately Resistant, R = Resistant)

Root-Knot NematodeReniform NematodeBoll WeevilGrasshopper (specify species): _____BollwormLygus (specify species): _____Cotton AphidPink BollwormCotton FleahopperSpider Mite (specify species): _____Cotton LeafwormStink Bug (specify species): _____Cutworm (specify species): _____Thrips (specify species): _____Fall ArmywormTobacco Bud WormOther (specify): _____

15. COMMENTS: Present any additional information that cannot adequately be described in 1 through 13 which significantly distinguishes your variety.

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). The information is held confidential until the certificate is issued (7 U.S.C. 2426).

EXHIBIT E
STATEMENT OF THE BASIS OF OWNERSHIP

1. NAME OF APPLICANT(S) D&PL TECHNOLOGY HOLDING COMPANY, LLC.	2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER 03W201BR	3. VARIETY NAME DP 454 BG/RR
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP, and Country) P.O. Box 157 Scott, Mississippi 38772	5. TELEPHONE (Include area code) (662) 742-4141	6. FAX (Include area code) (662) 742-3182
7. PVPO NUMBER 200500168		

8. Does the applicant own all rights to the variety? Mark an "X" in the appropriate block. If no, please explain. YES NO

☒☐

9. Is the applicant (individual or company) a U.S. national or a U.S. based company? If no, give name of country. YES NO

☒☐10. Is the applicant the original owner? YES NO If no, please answer one of the following:☒☐

a. If the original rights to variety were owned by individual(s), is (are) the original owner(s) a U.S. National(s)?

☐

YES

☐

NO

If no, give name of country

b. If the original rights to variety were owned by a company(ies), is (are) the original owner(s) a U.S. based company?

☐

YES

☐

NO

If no, give name of country

11. Additional explanation on ownership (If needed, use the reverse for extra space):

DP 454 BG/RR contains two proprietary genes, patented by the Monsanto Company and licensed to D&PL. One gene encodes a protein providing resistance to the herbicide glyphosate, and the other encodes an insect toxin.

PLEASE NOTE:

Plant variety protection can only be afforded to the owners (not licensees) who meet the following criteria:

1. If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.
2. If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.
3. If the applicant is an owner who is not the original owner, both the original owner and the applicant must meet one of the above criteria.

The original breeder/owner may be the individual or company who directed the final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definitions.

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 6 minutes per response, including the time for reviewing the instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

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